REMARKS

Upon entry of the amendment, claims 1-14 are all the claims pending in the application. Claim 9 has been amended to incorporate the subject matter of claim 15, and claim 15 has been canceled. In addition, Claim 13 has been amended to recite a ratio of 1.1/1 to 2.0/1 in view of the amendment to Claim 9. Thus, no new matter has been added herein.

Entry of the above amendments is respectfully requested.

A. Response to Claim Rejections Under 35 U.S.C. § 102

1. U.S. Patent No. 4,022,692 to Janneck

Referring to page 2, paragraph 1 of the Office Action, Claims 9 and 11-15 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 4,022,692 to Janneck ("Janneck"). Applicants traverse for the following reasons.

As discussed above, Claim 9 has been amended to incorporate the feature of Claim 15, and Claim 15 has been canceled. Accordingly, this rejection is moot with regard to Claim 15.

At page 4 of the Office Action, it is asserted that "Claim 9 recites feed passage material" and not permeate passage material. This is not correct. Claim 9 recites a spiral separation membrane element which comprises a perforated cored central tube and, wound therearound, one or more separation membranes, one or more feed-side passage materials, and ***one or more permeation-side passage materials***, wherein the feed-side passage materials each have warps extending almost parallel with the direction of flow of a feed liquid and wefts which are thinner than the warps, and a ratio of the warp diameter to the weft diameter is 2.0/1 or smaller. Thus, clearly Claim 9 recites "permeation-side passage materials"

Janneck fails to describe or suggest the permeation-side passage material. Figure 1 of Janneck discloses a support screen thereof wound in a spiral, with a sandwiched tubular membrane. *See*, col. 2, lines 34-37. Figure 3 of Janneck discloses that the longitudinal section view of the support screen thereof having a semipermeable tubular membrane arranged therebetween. *See*, col. 2, lines 38-41. Figures 1 and 3 of Janneck fail to teach a permeation-side passage material, as recited in Claim 9.

Claims 11-14 depend from Claim 9 and are patentable over Janneck for at least the same reasons Claim 9 is patentable over Janneck.

In light of the above, it is respectfully requested that the rejection of Claims 9 and 11-15 over Janneck be withdrawn.

2. U.S. Patent No. 4,902,417 to Lien

Claims 1, 2 and 4-14 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 4,902,417 to Lien ("Lien"). Applicants traverse for the following reasons.

Claim 1 of the present invention recites that the ratio of a pitch of the warps to a pitch of the wefts is 1/1.5 to 1/6. Lien fails to disclose the claimed ratio, as discussed below.

Figure 6 of Lien shows a feed-carrier layer 16 thereof including ribs 50 and cross-filaments 52. *See*, Figure 6. Lien discloses that the spacing between adjacent cross-filaments 52 is preferably between about 0.5 and about 1.5 times the spacing between the ribs 50. Thus, the spacing range of about 0.5 to 1.5 times the spacing between ribs converts to a warp pitch to weft

pitch ratio of 1/0.5 to 1/1.5. Thus, Lien fails to disclose the claimed ratio of pitch of the warps to the pitch of the wefts, as recited in Claim 1.

As discussed above, Claim 9 has been amended herein to incorporate the feature of Claim 15, specifically, that the ratio of the warp diameter to the weft diameter is 2.0/1 or smaller.

Lien discloses that the cross filaments 52 are of a height less than half of the height of the ribs, and preferably less than about 25% of the height of the ribs. *See, col. 6, lines 9-13.* Thus, \ heights of the cross filaments 52 and ribs thereof provide for a ratio different from the claimed ratio of 2.0/1 or smaller. Accordingly, Lien fails to disclose the claimed ratio of the warp diameter to the weft diameter, as recited in Claim 9.

In light of the above, Applicants respectfully submit that Claims 1, 2 and 4-14 are patentable over Lien, and accordingly, the rejection should be withdrawn.

B. Response to Claim Rejection Under 35 U.S.C. § 103

Claim 3 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lien '417. Applicants traverse for the following reasons.

Claim 3 depends from Claim 1 and further defines the spiral separation membrane element, where the ratio of a pitch of the warps to a pitch of the wefts is 1/3 to 1/5. Thus, it is respectfully submitted that Claim 3 is patentable for at least the same reasons as Claim 1.

In addition, a comparison of the passage materials produced in Examples 1 and 2 of the specification with the passage materials produced in Comparative Examples 1 and 2 of the specification demonstrate that the element recited in Claim 1 provides for unexpected superior results. Comparative Example 1 describes that the warp pitch/weft pitch ratio thereof was 1:1.

Comparative Example 2 describes that the warp pitch/weft pitch ration thereof was 1:8. The passage materials of Examples 1 and 2 could attain a pressure loss reduced to about a half of that for the conventional passage material of Comparative Example 1. A stable measurement of pressure loss in Comparative Example 2 could not be taken. In this regard, the element recited in Claim 1 is unexpectedly superior.

It is respectfully submitted that the only variable in the comparison of Examples 1 and 2 with Comparative Examples 1 and 2 is the warp pitch/weft pitch ratio. Thus, the Comparative Examples 1 and 2 are closer to claimed invention than the membrane cartridges disclosed in Lien. Accordingly, the comparative examples are more closely related to the present invention that the prior art relied upon, and the disclosed examples are commensurate with the scope of Claim 1.

Further, referring to Figure 2 of Applicants' specification, the Examiner asserts that a person of ordinary skill in the art would have expected a linear relationship between the warp pitch/weft pitch ratio and the loss of pressure. However, Applicants are comparing the differences in loss of pressure, not the linear relationship between warp pitch/weft pitch ratio. The fact that there is a linear relationship is irrelevant. Moreover, the axis of abissica of Figure 2 of Lien does not represent a "ratio of a pitch of the warps and a pitch of the wefts," but rather a flow rate.

In light of the above, Claim 3 is patentable over Lien. Thus, it is respectfully submitted that the rejection be withdrawn.

C. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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